CLMPTO

07/29/04

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1. The use of an effective amount of one or more catalysts which is/are enzyme(s) belonging to the heme biosynthetic pathway, or an enzymatically equivalent part or analogue thereof, together with a pharmaceutically acceptable carrier, for the preparation of a pharmaceutical composition for treatment or prophylaxis of a disease caused by a deficiency, in a subject, of an enzyme belonging to the heme biosynthetic pathway.

Please amend claims 2, 3, 5, 7, 9, 10, and 11 as follows:

2 (amended). A method for the preparation of rhPBGD by a method comprising

(a) providing a vector comprising an expressible nucleic acid sequence encoding PBGD;

(b) culturing the transformed host cell under conditions facilitating expression of the nucleic acid sequence;

(c) recovering the expression product from the culture.

3. The use according to claim 1, wherein the catalyst is one or more enzymes selected from the group consisting of
delta-aminolevulininic acid synthetase,
delta-aminolevulinic acid dehydratase (ALAD),
porphobilinogen deaminase (PBGD),
uroporphyrinogen III cosythetase,
uroporphyrinogen decarboxylase,
coproporphyrinogen oxidase,
protoporphyrinogen oxidase, and
ferrochelatase,
or an enzymatically equivalent part or analogue thereof.

4 (amended). A method according to claim 2 further comprising a purification step.

5. The use according to claim 1, wherein the catalyst is a recombinant form of the enzyme belonging to the heme biosynthetic pathway or of the enzymatically equivalent part or analogue thereof.

6 (amended). A method according to claim 2, wherein the PBGD is recombinant human PBGD encoded by Seq. ID NO 3 (clone PBGD 1.1) or Seq. ID NO 4 (non-erythro PBGD 1.1.1).

7 (amended). An expression plasmid pExpl-M2-BB as shown in Seq. ID NO 1.

8. The use according to claim 7, wherein the catalyst is lyophilised.

9 (amended). A rhPBGD produced by the method of claim 2 and able to lower the levels of PBG and ALA in mice during an acute attack of porphyria in a transgenic mouse model where the PBGD gene has partially been knocked-out.

10 (amended). A rhPBGD having a stability of at least 6 weeks at 20°C.

11 (amended). A rhPBGD having a stability resulting in a decrease in activity of less than 10% per month.

Please add the following new claims:

12 (new). A genetically modified bacterial cell which does not produce PBGD of non human origin.

13 (new). The cell of claim 12 which furthermore produces a recombinant human PBGD.

14 (new). A method of producing recombinant human PBGD which comprises cultivating the cell of claim 13 under conditions facilitating production of the recombinant human PBGD by that cell.

15 (new). A method of obtaining a bacterial cell which can produce a recombinant human PBGD free of PBGD of nonhuman origin which comprises transforming the cell of claim 12 with an expression vector comprising an expressible nucleic acid sequence encoding said recombinant human PBGD.

16 (new). The method of claim 14 in which the native bacterial hemC gene is inactivated.

17 (new). The method of claim 14 in which the native bacterial hemC gene is inactivated by deletion.